

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of: Peltola et al. )  
Serial No.: 10/568,792 ) Group Art Unit: 3752  
Filed: February 17, 2006 ) Confirmation No.: 6422  
Title: METHOD AND EQUIPMENT FOR ) Examiner: Steven Michael Cernoch  
FIRE-FIGHTING )  
Date: October 14, 2011 )  
Attorney )  
Docket No.: 37888-400200 )

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**APPELLANT'S REPLY BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

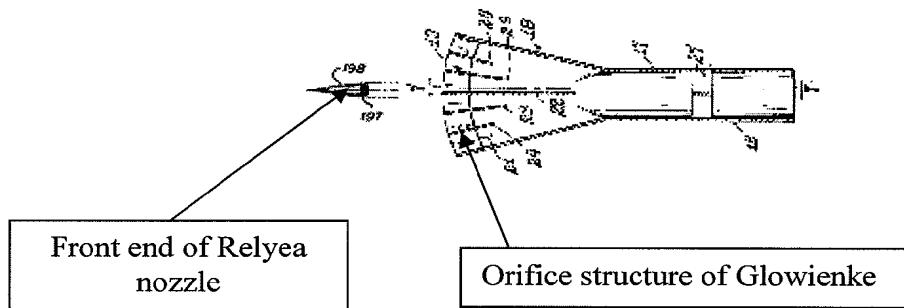
The following Reply is in response to the Examiner's Answer of September 6, 2011. The Examiner's arguments are misplaced in maintaining the rejection of claims 1-10 and 14-17 under 35 U.S.C. §103(a) because: (1) it would not have been obvious to combine the teachings of Relyea and Glowienke, as they disclose completely different structures and functions; and (2) even if combined, Relyea and Glowienke fail to disclose the combinations of features recited in independent claims 1, 5, 7, 16 and 17 of the present application.

**I. It Would not have been Obvious to Combine Relyea and Glowienke**

The combination of Relyea and Glowienke would not have been obvious because (1) the structures disclosed in Relyea and Glowienke are physically impossible to combine, (2) it is impossible to combine the structures of Relyea and Glowienke without using Appellant's patent application as a road map; and (3) a combination of Relyea and Glowienke would

render the intended purposes specifically disclosed in Relyea unsatisfactory for piercing an object in order to inject fire retardant.

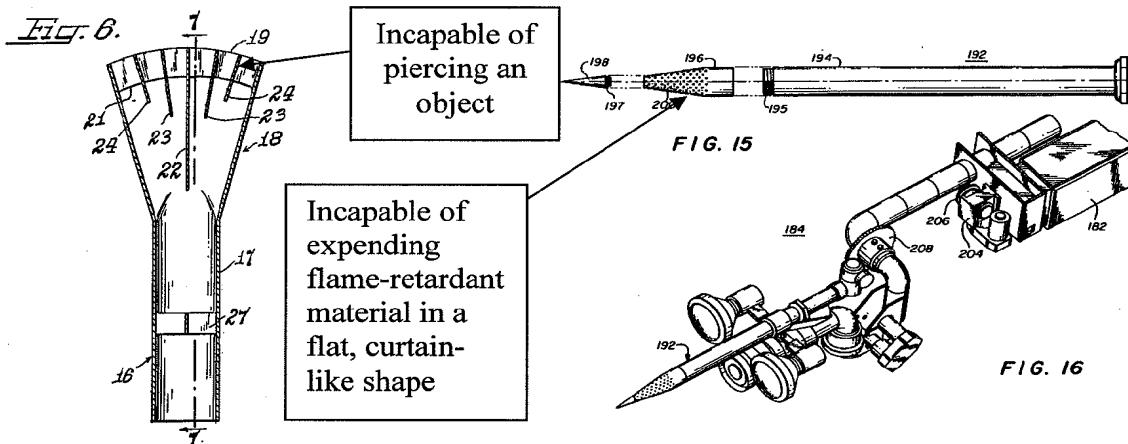
First, the nozzle structures taught in Relyea and Glowienke are opposites – Relyea discloses a conical structure converging at a point at the front-most end, and Glowienke discloses a divergent structure that is wider at the front-most end than at the rear end of the nozzle. Combining the divergent nozzle structure of Glowienke with the pointed nozzle structure of Relyea would have resulted in the following structure:



The Examiner simply failed to consider the resulting structure from the proposed combination of Relyea and Glowienke. The Examiner instead relied on the individual teachings of Relyea and Glowienke with a consistent eye on Appellant's claimed invention. Yet, it is well settled that using Appellant's invention as a roadmap to combine references is improper. (See MPEP §2145(X)(A), discussing impermissible hindsight reconstruction).

Second, the combination of Relyea and Glowienke would render the intended purpose set forth in Relyea impossible. (See MPEP §2143.01(V), forbidding prior art combinations where such a combination would render the primary reference unsatisfactory for its intended purpose). Relyea discloses a boom system mounted to a vehicle that is specially adapted to pierce a burning object. (Fig. 1, Abstract). However, the tool in Glowienke includes a structure, best shown in Fig. 6, that is incapable of piercing an object. It would be impossible to combine the diverging structure of Glowienke with the conical structure of Relyea without

defeating the intended purpose of the Relyea - to pierce an object. If Glowienke were combined with Relyea, the resulting structure would be wider at the front end, and thus incapable of piercing an object.



To support his position, the Examiner relies on several dictionary definitions of the word "pierce" to contend that "pierce" could mean thrusting an object through a wall where such an object need not have any point or similar structure. These dictionary definitions are irrelevant. Relyea clearly relates to a "piercing nozzle" that pierces an object in the same way a needle pierces a cloth, for example, and does not use the term "pierce" in the unconventional manner presented by the Examiner. Regardless, combining Glowienke with Relyea would forbid the piercing nozzle of Relyea to "pierce" in the manner disclosed in Relyea. Accordingly, the above combination would not have been obvious because it would render Relyea unsatisfactory for its intended purpose.

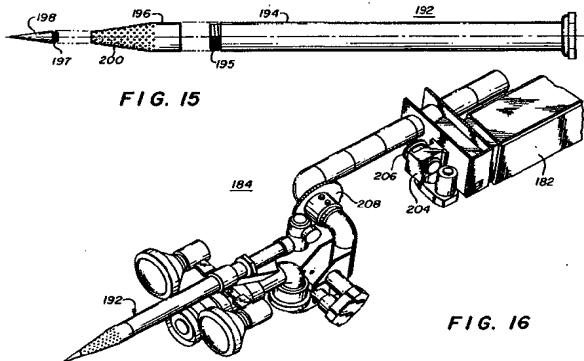
Because the references would not have been obvious to combine, Appellant respectfully submits that the rejection of the claims under 35 U.S.C. §103(a) is improper and should be overturned.

**II. Relyea and Glowienke fail to disclose “a substantially conical nozzle, the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices”**

Independent claim 16 recites “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices...” Independent claim 17 recites similar features. Relyea and Glowienke fail to disclose and would not have rendered obvious the above feature.

The above feature allows the nozzle to pierce an object, such as an airplane that is on fire, and to thereafter expend flame retardant material in the form of a curtain-like shape. The solid front portion of the nozzle pierces the object, and the front-most nozzles expend flame retardant material. The Examiner incorrectly contends that Fig. 15 of Relyea discloses the above feature. (Examiner’s Answer, page 8).

Figs. 15 and 16 of Relyea (reproduced below), illustrate a piercing nozzle 192 having “a body portion 194, a tapered portion 196 of a piercing tip that has orifices 200 therein and a penetrating tip 198.” Relyea, col. 10, lines 35-38. The penetrating tip 198 is not located between the nozzles, as required by claims 16 and 17. Rather, the entire penetrating tip 198 of Relyea is located forward of the nozzles.



Glowienke also fails to disclose the above feature, and merely relates to a series of nozzles that extend in a diverging manner.

Relyea and Glowienke thus fail to disclose and would not have rendered obvious “...a substantially conical nozzle..., the substantially conical nozzle having a solid front most portion between a front most pair of the plurality of orifices,” as recited in independent claim 16 and as similarly recited in independent claim 17.

Because no combination of Relyea and/or Glowienke teaches each and every element of the claims, the rejection of claims 16 and 17 under 35 U.S.C. §103(a) is improper and should be overturned.

**III. Relyea and Glowienke fail to disclose and would not have rendered obvious a plurality of single jets ... [that] intersect one another to form a single uniform jet having a flat curtain-like shape**

Independent claims 1, 5, 7, 16 and 17 each recites either a structure or process that produces “a plurality of single jets ... [that] intersect one another to form a single uniform jet having a flat curtain-like shape.” Relyea and Glowienke fail to disclose, either alone or in combination, the above feature.

The benefits of the above configuration are discussed in the specification, for example, at paragraph [0010]:

An advantage of the invention is that the jet has a flat curtain-like shape, which enables the jet to be directed accurately. In addition, such a flat curtain-like jet can form a “wall” which enables an object to be extinguished to be confined. In aircraft fires, for example, a wall of a fire extinguishing medium can be formed between a seat of fire and the rest of a passenger cabin so that the fire can be prevented from expanding. Furthermore, the jet may serve as a wall to protect passengers exiting the passenger cabin.

The Examiner acknowledged that Relyea fails to disclose the above feature. (*See, e.g.*, Examiner’s Answer, page 5). The Examiner instead relies on Fig. 6 of Glowienke to remedy the deficiencies of Relyea. Yet, Glowienke also fails to disclose a structure or process that produces a plurality of single jets that intersect one another to form a single uniform jet having a flat curtain-like shape.

The Examiner's Answer contends that Fig. 6 of Glowienke shows that "the water jets ejecting will inherently intersect each other as once the separation walls 21-24 end, nothing is stopping the water from intersecting especially at the pressure sprayed." (Examiner's Answer, page 5). The Examiner's argument appears to rely on speculation and not on the actual disclosure of Glowienke. For example, Fig. 6 of Glowienke illustrates a nozzle that is adapted to produce a diverging spray pattern and does not illustrate intersecting jets at all, as required by the claims of the present application.

Figure 1 of Glowienke (reproduced below) illustrates the spray pattern achieved by the nozzle disclosed in Glowienke, and shows that the single jets expelled from the Glowienke head 16 do not intersect one another in any manner.

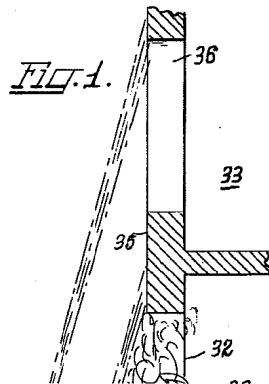
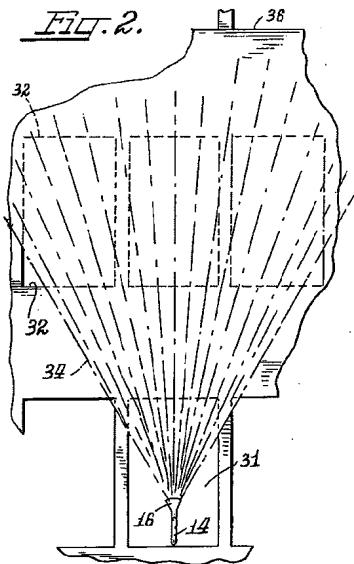


Figure 2 of Glowienke (reproduced below) likewise illustrates that the spray pattern of Glowienke does not include any single jets that intersect one another. Rather, as illustrated in Figure 2 of Glowienke, the spray pattern is made up of independent, separate, and diverging single jets.



Glowienke thus fails to disclose, and would not have rendered obvious, "a plurality of single jets ... [that] intersect one another to form a single uniform jet having a flat curtain-like shape," as recited in independent claims 1, 5, 7, 16 and 17 of the present application. Because no combination of Relyea and/or Glowienke teaches each and every element of the claims, Appellant respectfully submits that the rejection of claims 1-10 and 14-17 under 35 U.S.C. §103(a) is improper and should be overturned.

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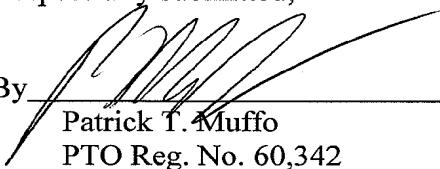
For at least these reasons, Appellant submits that the legal and factual bases for the §103(a) rejection are in error, and requests the Honorable Board to overturn the §103(a) rejection.

**IV. Conclusion**

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that claims 1-17 are in condition for allowance. For all of the above reasons, Appellants respectfully request this Honorable Board to reverse the rejections of claims 1-17.

Respectfully submitted,

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